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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,709	09/26/2005	Takashi Chida	360842012100	4017
25227 7590 10/26/2007 MORRISON & FOERSTER LLP 1650 TYSONS BOULEVARD SUITE 400 MCLEAN, VA 22102			EXAMINER WANG, EUGENIA	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 10/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,709	Applicant(s) CHIDA ET AL.	
	Examiner Eugenia Wang	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 20-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 16 is/are rejected.
- 7) ☒ Claim(s) 14, 15 and 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/16/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 20-25, 32-35, 37-46, and 48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on August 27, 2007.

Response to Arguments

2. Applicant's arguments filed August 27, 2007 have been fully considered but they are not persuasive.

Applicant argues that the method claims of Group II has the same special technical feature as group I.

Examiner respectfully disagrees and upholds view made in the election restriction. The special technical feature of the porous carbon substrate in the invention of Group I lies in its specific properties: the pores with a size of 10 μm and less and the volume of such pores, per unit weight of the sheet, being in the range of 0.05 to 0.16 cc/g. The method does not require the specified properties, and thus lacks the same technical feature (as a different carbon porous substrate could be formed). For the reasons set forth above, the restriction is deemed proper and is made final.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

4. The information disclosure statement filed October 16, 2006 has been placed in the application file and the information referred to therein has been considered as to the merits. (Note: Only the abstract of JP-01-077625, submitted as JP-64-077625 has been considered. For consideration of the full disclosure, please submit a translation of the full document.)

Specification

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites that a carbonaceous powder is in a range of 1 to 60% weight without specifying what this weight percentage is with respect to. Without a positive recitation as to what the weight percentage is relative to, it is indefinite, as the weight percentage could be to any substance in the porous carbon substrate (i.e. carbon fibers, resin, or the combination of carbon fibers and resin). Note: For the purpose of carrying

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out the office action, the following claim interpretation has been applied – the weight percentage is with respect to the total solids of the substrate (fiber and resin).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 12, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4505994 (Shimada et al.).

As to claim 1, Shimada et al. teach a sheet-shaped article containing porous carbon fibers (carbon substrate), where the pore volume of the pores having a diameter in the range from 30 to 1000 Angstroms (0.0030 to 0.100 μm) is more than 0.1 cc/g (col. 3, lines 2-9). (Therefore, Shimada et al. teaches a portion of the claimed range of pore volume – from 0.1 cc/g to 0.1 cc/g.) Furthermore, under the “Examples 5-6 and Comparative Example 4” section, it is taught that polypropylene single fibers, small quantities of a viscosity increasing agent, and a binder were mixed with the carbon fibers (col. 7, lines 39-43). The polypropylene, viscosity increasing agent, and binder serves as a carbonized resin that binds the short fibers (as claimed, since polypropylene contains carbon).

As to claim 12, Shimada et al. teach under the “Examples 5-6 and Comparative Example 4” section that the length of the fiber is 3 mm (col. 7, lines 18-20).

As to claim 16, Shimada et al.'s porous sheet of carbon fibers is capable of acting as a gas diffusion layer, since it is materially the same as the substrate of claim 1. It has been held that the recitation of an element is "capable" of performing a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

While intended use recitations and other types of functional language cannot be entirely disregarded. However, in apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963).

Claim Rejections - 35 USC § 102/103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 6-8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shimada et al.

The teachings of Shimada et al. have been set forth above and are herein incorporated.

As to claims 6-8, Shimada et al. teaches a porous carbon sheet. Although Shimada et al. does not specifically mention that the maximum bending load of the porous carbon substrate is between 0.25 to 2.0 N/cm (as required by claim 6), the maximum bending load displacement is between 0.7 to 2.3 mm (as required by claim 7), or the bending modulus of elasticity is between 1 to 15 GPa (as required by claim 8), these properties would be inherent to the porous carbon sheet taught by Shimada et al.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but

the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that the porous carbon substrate has the same characteristics as that of the instant application (a porous carbon sheet with carbon fibers bound by a resin, wherein the volume of pores having pre sizes of 10 μm and less have a pore volume between the range of 0.05 and 0.16 cc/g, as required by claim 1 and rejected by Shimada et al. above). Therefore, one of ordinary skill in the art would expect a porous carbon substrate with the same characteristics to inherently have the same mechanical properties of maximum bending load (claim 6), maximum bending load displacement (claim 7), and bending modulus of elasticity (claim 8).

The Examiner requires applicant to provide that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the

same...[footnote omitted].” The burden of proof is similar to that required with respect to product-by-process claims. *In re Fitzgerald*, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Alternately, if it is shown that the carbon sheet of Shimada et al. does not display the claimed properties of maximum bending load (claim 6), maximum bending load displacement (claim 7), and bending modulus of elasticity (claim 8), it would also be obvious to one of ordinary skill in the art to optimize such properties in order to achieve a substrate with desired properties of flexibility (so that the substrate will not break as easily) and rigidity (so that the substrate will maintain its desired shape). It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It has been held that discovering that general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art *unless* there is evidence indicating such ranges is critical. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

Claim Rejections - 35 USC § 103

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al., as applied to claim 1, in view of US 4740434 (Hirota et al.).

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As to claim 2, Shimada et al. teaches that the electrode with the porous carbon sheet is 1 mm thick (col. 7, lines 48-56). This would allow one of ordinary skill in the art to appreciate that the porous carbon sheet is thinner than 1 mm. However, Shimada et al. does not specifically teach that the porous carbon substrate has a thickness between 0.10 to 0.25 mm thick.

Hirota et al. teaches a metal-halogen (specifically zinc-halogen) battery, much like Shimada et al. Furthermore, Hirota et al. teaches that the surface of the electrode has a treatment (porous carbon substrate) material made of phenol resin series activated charcoal fiber (carbonaceous material). Hirota et al. specifically embodies one with the thickness of 0.25 mm (col. 4, table 1, electrode M). The motivation for making an electrode with a surface treatment (porous carbon substrate) thickness of 0.25 mm would be to form a substrate layer with an appropriate thickness. Therefore one of ordinary skill in the art at the time the invention was made would have found it obvious to make a substrate layer with the thickness of 0.25 mm, as such a thickness was known in the art to provide an appropriate backing layer for an electrode.

Furthermore, it has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d

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454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Claims that differ from the prior art only by slightly different (non-overlapping) ranges are prima facie obvious without a showing that the claimed range achieves unexpected results relative to the prior art. (In re Woodruff, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990)).

10. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al.

The teachings of Shimada et al. have been set forth above and are herein incorporated.

As to claim 3, Shimada et al. does not specifically mention that the porosity of the porous carbon substrate is in the range of 70 to 90%. However, porosity is/are result effective variable(s), as controlling porosity would optimize things such as mechanical strength, conductivity, and lightweightness. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make a carbon backing substrate as disclosed by Shimada et al. with a porosity of between 70 and 90% porosity, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). It has been held that discovering that general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art *unless* there is evidence indicating such ranges is critical. *In re Boesch*, 617 F.2d 272, 205 USPQ

215 (CCPA 1980). *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).
In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

As to claim 4, Shimada et al. teach under the "Examples 5-6 and Comparative Example 4" section that the end measurement (denier, diameter) is 2 μm (col. 7, lines 18-20). Shimada et al. does not specifically teach that the diameter is between 5 and 20 μm , as claimed by the instant application. However, It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Claims that differ from the prior art only by slightly different (non-overlapping) ranges are prima facie obvious without a showing that the claimed range achieves unexpected results relative to the prior art. (*In re Woodruff*, 16 USPQ2d 1935,1937 (Fed. Cir. 1990)). Claimed ranges of a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result, which is different in kind and not merely in degree from the results of the prior art. (MPEP 2144.08)

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11. Claims 5, 9, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al., as applied to claim 1, in further view of 2003/0008195 (Chiem et al.).

As to claim 5, Shimada et al. does not teach that there is a carbonaceous powder in the carbon substrate.

Chiem et al. teaches a substrate for an electrode material (para 0014). Furthermore, the substrate is a carbonaceous web (porous carbon substrate) that is further loaded with an electrically conductive material, such as acetylene carbon black or graphite particles (para 0015). The motivation for loading a porous carbon substrate with acetylene carbon black or graphite particles is in order to improve electrically conductivity (para 0015, lines 5-9). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to include adding acetylene carbon black particles or graphite particles into a carbon substrate, as taught by Chiem et al., to the carbon substrate of Shimada et al. in order to improve electrical conductivity.

As to claim 9, the addition of the carbon particles Chiem et al. added to Shimada et al. would obviate the particle diameter of the claim. Chiem et al. teaches a specific example, wherein acetylene carbon black was added; it is stated that the particle size is 42 nm (0.042 μm) (para 0051, lines 1-14).

As to claim 10, the addition of the carbon particles Chiem et al. added to Shimada et al. would obviate the type of carbon particle, as Chiem et al. teaches the carbon materials added are acetylene carbon black or graphite particles (para 0015).

As to claim 11, the addition of the carbon particles Chiem et al. added to Shimada et al. would obviate the amount (in weight percentage) of the carbonaceous powder added. Chiem teaches a specific example wherein the solid content of loading into a carbon substrate was 8% by weight. The solid loading was 67% Shawinigan carbon (acetylene black). Therefore, the percentage loading of carbon black is 5.63% by weight, as shown in the calculation below.

$$8 \text{ _wt\%} * .67 = 5.63 \text{ _wt\%}$$

12. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al., as applied to claim 1, in view of WO 02/42534 (Shimazaki et al.). (Note: US 6812171 is being relied on as the English translation for the WO document.)

As to claim 13, Shimada et al. does not teach that the density of the porous carbon substrate is in the range of 0.3 to 0.7 g/cm³.

Shimazaki et al. teaches a process for producing a carbon fiber sheet, wherein the sheet has a bulk density of 0.40 to 0.80 g/cm³ (abs). The motivation for creating a carbon sheet with the aforementioned bulk density is to ensure high electrical conductivity that has appropriate flexibility (col. 7, lines 10-19). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made use a carbon substrate with a bulk density between 0.40 and 0.80 g/cm³ in order to have a carbon sheet that has good electrical conductivity and appropriate flexibility.

Allowable Subject Matter

13. Claims 14, 15, and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an Examiner's statement of reasons for allowance: none of the prior art of record, alone or in combination, appear to teach, suggest, or render obvious the invention of at least claims 14 and 15.

Claim 14 teaches a porous carbon substrate comprising the elements therein. Notably, that the porous carbon substrate has a peak pore size of the pores in the range of 25 to 55 μm .

None of the prior art of record alone or in combination teach, suggest, or render obvious the fact that the peak pore size is in the range of 25 to 55 μm (especially when taking into the account that claim 1 controls the pore volumes of the pore sizes having a size of 10 μm and less to a range between 0.05 and 0.16 cc/g). Notably, Shimada et al. teach that that the pore diameters are in a range of from 30 to 1000 angstroms (0.0030 to 0.100 μm) is more than 0.1 cc/g (col. 3, lines 2-9). Furthermore, Shimada et al. teaches that if the diameters exceed 1000 angstroms, then the surface area becomes too small (col. 3, lines 14-17). Therefore, Shimada et al. teaches away from having a peak pore size in the range of 25-55 μm , as required by claim 14. It is also noted that none of the other prior art of record teach, suggest, or render obvious the controlling of the pore volume of only a portion of the pore sizes (those 10 μm or less), wherein the

pore size distribution is large, with the peak pore size being between 25 and 55 μm . Therefore, the invention of claim 14 is patentable over the prior art.

Claim 15 teaches a porous carbon substrate comprising the elements therein. Notably, that the porous carbon substrate has a water repellent material added to it.

None of the prior art of record, alone or in combination teach, suggest, or render obvious the fact that there is water repellent material added to the porous carbon substrate. Notably, Shimada et al. teaches that the porous carbon substrate is used in a metal-halogen cell. Water is not included in a metal-halogen cell, nor is it a byproduct of the reaction of a metal-halogen cell. Therefore, Shimada et al. does not teach that there is a water-repellent material in the carbon substrate. Furthermore there is no motivation to include a water repellent substance in the carbon substrate of Shimada et al. Therefore, the invention of claim 15 is patentable over the prior art. Since claims 17-19 are dependent on claim 16, they would be patentable for the same reason.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugenia Wang whose telephone number is 571-272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EW



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PRIMARY EXAMINER